

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF LED COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS, AND SIGNS AT THE INTERSECTION OF US 1 (WASHINGTON BLVD) AND MONTGOMERY ROAD IN HOWARD COUNTY. US 1 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.

INTERSECTION OPERATION

THIS INTERSECTION CURRENTLY OPERATES IN A NEMA SEVEN-PHASE FULL-TRAFFIC-ACTUATED MODE WITH EXCLUSIVE-PERMISSIVE LEFT TURN PHASES FOR NORTHBOUND AND SOUTHBOUND US 1, SPLIT PHASES FOR EASTBOUND AND WESTBOUND MONTGOMERY ROAD, AND A PRE-EMPTION PHASE FOR WESTBOUND MONTGOMERY RD. AN ALTERNATE PEDESTRIAN PHASE WILL BE ADDED TO CROSS THE SOUTH LEG OF US 1.

CONTROLLER REQUIREMENTS

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED. AN APS CONTROL UNIT WILL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA.

SPECIAL NOTE

APS WILL FUNCTION AS FOLLOWS:

FOR US 1 (WASHINGTON BOULEVARD):

A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS WASHINGTON BOULEVARDAT MONTGOMERY ROAD. CROSSWALK ANGLES LEFT."

B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

CONTACT PERSONS FOR DISTRICT #7 ARE AS FOLLOWS:

MR. JOHN CONCANNON
ASSISTANT DISTRICT ENGINEER-TRAFFIC
PHONE: (301)624-8140

MS. ANDREA ABEND
UTILITY ENGINEER
PHONE: (301)624-8115

MR. RAYMOND JOHNSON
ASSISTANT DISTRICT ENGINEER-MAINTENANCE
PHONE: (301)624-8105

CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MR. RICHARD L. DAFF, SR.
CHIEF, TRAFFIC OPERATIONS
DIVISION
PHONE: (410)787-7630

MR. ROBERT SNYDER
ASSISTANT DIVISION CHIEF
TRAFFIC OPERATIONS
(410)787-7630

MR. ED RODENHIZER
CHIEF, SIGNAL OPERATIONS
(410)787-7650

MR. EUGENE BAILEY
CHIEF, SIGN OPERATIONS
(410)787-7676

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
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EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
2003	TEST PIT EXCAVATION	EA	2
5001	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH	LF	366
5006	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS	LF	155
8001	CONCRETE FOR SIGNAL FOUNDATION	CY	1.0
8002	AUDIBLE / TACTILE PEDESTRIAN PUSHBUTTON	EA	2
8003	BREAKAWAY PEDESTAL POLE - ANY SIZE	EA	2
8004	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL	EA	2
8005	REMOVE AND DISPOSE PER ASSIGNMENT	EA	1
8006	PEDESTRIAN EDUCATION SIGN 2 - R10-3(1) (9"x15" - WASHINGTON BLVD)	SF	1,875
8007	NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE	LF	35
8008	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	35
8012	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	EA	1
8013	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)	LF	330
8014	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)	LF	325
8016	APS CENTRAL CONTROL UNIT	EA	1

EQUIPMENT LIST "C"

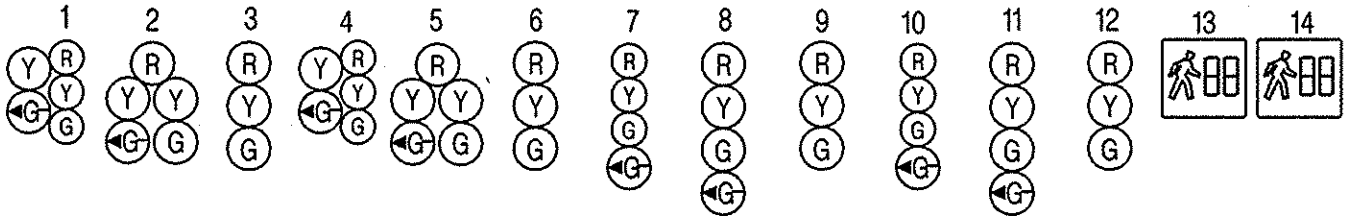
C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND RETURNED TO THE SHA.

ALL MATERIALS AND EQUIPMENT REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
3. ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
4. UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
5. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS. HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS. TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
6. ACCESSIBLE PEDESTRIAN CONTROL EQUIPMENT SHALL BE DELIVERED TO THE SHA SIGNAL SHOP FOR TESTING AND PROGRAMMING PRIOR TO INSTALLATION. CONTACT MR. EDWARD RODENHIZER AT 410-787-7652 TO COORDINATE.

PHASE CHART



PHASE 1 & 5	←G-R	←G-R	R	←G-R	←G-R	R	R	R	R	R	R	R	R	DW	DW	
1 & 5 CHANGE	THE CONTROLLER MAY SKIP TO PHASE 1 & 6, PHASE 2 & 5, OR PHASE 2 & 6															
PHASE 1 & 6	←G-G	←G-G	G	R	R	R	R	R	R	R	R	R	R	DW	DW	
1 CHANGE	←Y-G	←Y-G	G	R	R	R	R	R	R	R	R	R	R	DW	DW	
PHASE 2 & 5	R	R	R	←G-G	←G-G	G	R	R	R	R	R	R	R	DW	DW	
5 CHANGE	R	R	R	←Y-G	←Y-G	G	R	R	R	R	R	R	R	DW	DW	
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	R	DW	DW	
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	R	DW	DW	
PHASE 3	R	R	R	R	R	R	R	R	R	R	G	G	G	DW	DW	
3 CHANGE	R	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW	
PHASE 4	R	R	R	R	R	R	←G-	←G-	G	R	R	R	R	DW	DW	
4 CHANGE	R	R	R	R	R	R	Y	Y	Y	R	R	R	R	DW	DW	
PHASE 4 ALT.	R	R	R	R	R	R	←G-	←G-	G	R	R	R	R	WK	WK	
PED CLEARANCE	R	R	R	R	R	R	←G-	←G-	G	R	R	R	R	FLOW	FLOW	
4 ALT. CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	Y	Y	Y	DW	DW	
FLASHING OPERATION	FLY	FLY	FLY	FLY	FLY	FLY	FLR	FLR	FLR	FLR	FLR	FLR	FLR	DARK	DARK	

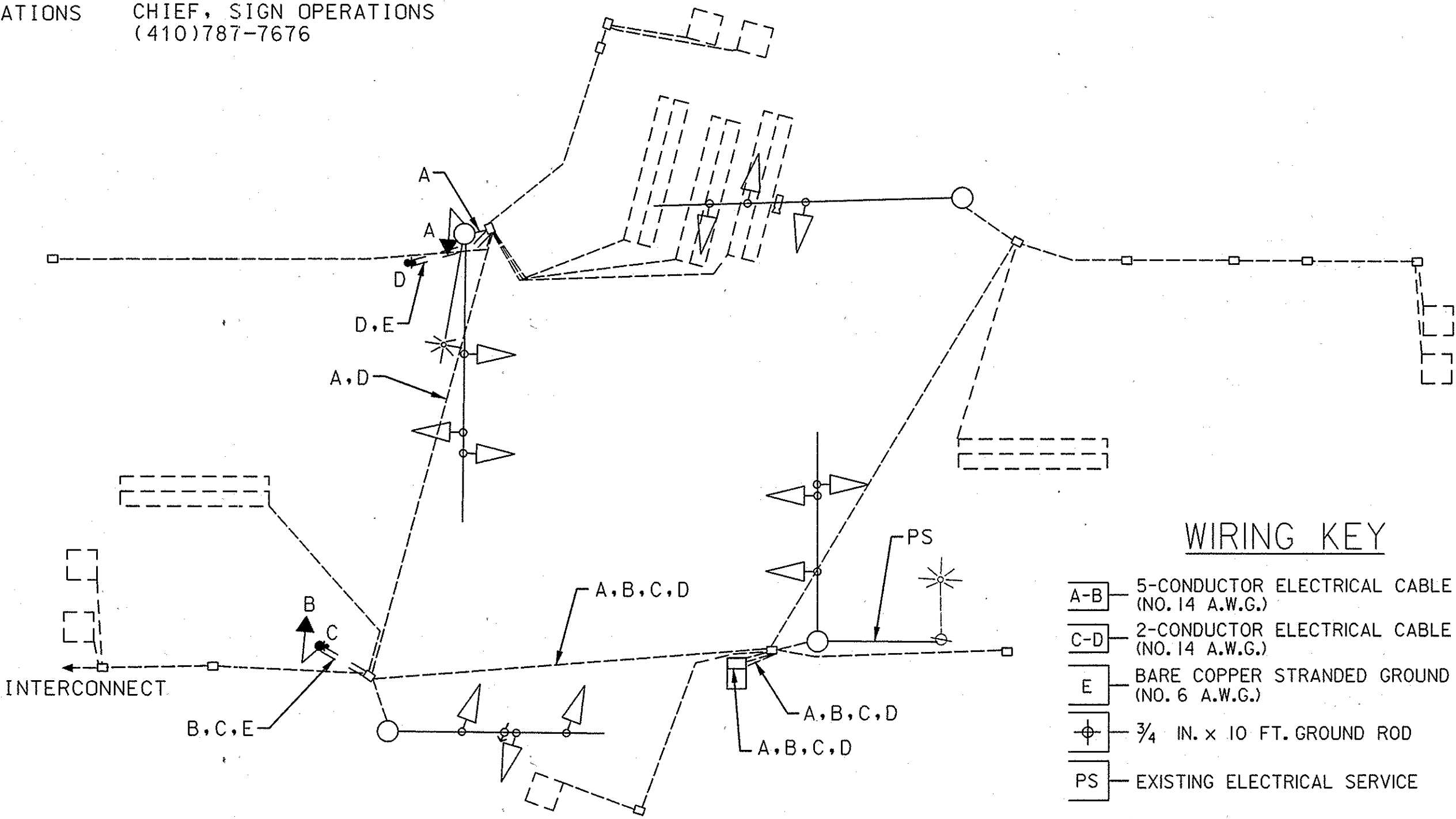
FIREHOUSE PRE-EMPTION

PRE-EMP PH 3	R	R	R	R	R	R	R	R	R	←G	←G	G	DW	DW	
PRE-EMP CLEAR	R	R	R	R	R	R	Y	Y	Y	R	R	R	DW	DW	
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	DW	DW	

GENERAL NOTES CONTINUED

7. LOCATION OF ACCESSIBLE PEDESTRIAN PUSHBUTTONS MUST MEET THE LOCATION REQUIREMENTS OF THE MUTCD, SECTION 4E-09 AND FIGURE 4E-2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNAL: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL THE CONFLICT HAS BEEN RESOLVED. IF NEEDED, A DESIGN WAIVER SHALL BE OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
8. INSTALL PVC SLEEVE FOR SIGNS IN SIDEWALK AREAS.
9. PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR FROM 60"x60" LEVEL LANDING AREA. A LEVEL LANDING AREA IS AN AREA WITH A CROSS SLOPE OF LESS THAN 2%.
10. PUSHBUTTON IS TO BE LOCATED SO THAT A PEDESTRIAN IN A WHEELCHAIR LOCATED ON THE LEVEL LANDING AREA, DOES NOT HAVE TO REACH MORE THAN 18"
11. THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
12. FOR LOCATION AND MD STANDARD OF SIDEWALK RAMPS REFER TO THE ROADWAY PLANS.
13. ALL SIGNAL WORK SHALL BE COORDINATED WITH ROADWAY PLANS. SIGNAL EQUIPMENT SHALL BE INSTALLED PRIOR TO SIDEWALK/RAMP IMPROVEMENTS.
14. PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.

WIRING DIAGRAM



WIRING KEY

A-B	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
C-D	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
E	BARE COPPER STRANDED GROUND WIRE (NO. 6 A.W.G.)
⊕	3/4 IN. x 10 FT. GROUND ROD
PS	EXISTING ELECTRICAL SERVICE

SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

US 1 (WASHINGTON BLVD) AND
MONTGOMERY ROAD
ELK RIDGE, MD

GENERAL INFORMATION SHEET

SCALE NONE DATE 4/2008 CONTRACT NO. AX3755133

DESIGNED BY MLH COUNTY HOWARD

DRAWN BY MLH LOGMILE 13000109.61

CHECKED BY DAE TMS NO. 1935

FAP NO. TOD NO.

TS NO. 452-H-GI DRAWING SG-02 OF 02 SHEET NO. 30 OF 30

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